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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,031	07/24/2003	Stephen J. Miller	T-5550A	3343

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,031

Applicant(s)

MILLER, STEPHEN J.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/24/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Santilli et al. (US 5,282,958).

The Santilli reference discloses a lube oil product having a VI which may be greater than 150, a pour point of less than -10°C , and a viscosity of about 3 cSt. See column 7, lines 15-22.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicks et al. (US 4,678,556) in view of Santilli et al. (US 5,282,958).

The Hicks reference discloses a process for producing a lube oil stock. The process comprises contacting a waxy feed having a wax content greater than 20 wt% with a molecular sieve dewaxing catalyst that contains a metal component to produce a partially dewaxed lube. Catalytic dewaxing conditions include pressures ranging from 100 to 2000 psig. This catalytic dewaxing step is operated at conditions to remove a certain percentage of the wax content in the feed and is not operated to produce a product having a target pour point. The pour point after the catalytic dewaxing ranges from 45° to 100°F (7° to 38°C). The product from the catalytic dewaxing step is then subjected to solvent dewaxing to produce a lube base stock having a target pour point ranging from about 0° to 20°F (-18° to -7°C). See column 2, line 66 through column 3, line 8 and column 4, lines 16-65.

The Hicks reference does not disclose the claimed dewaxing catalysts, the catalytic dewaxing conversion percent, the lube oil base stock characteristics, or the feeds of claims 7 and 8.

The Santilli reference discloses a process for producing a lube oil having a VI between 90 and 160, pour point of less than 0°C, and viscosity of between 3 and 1000 cSt @ 40°C. The process comprises contacting a waxy feed under isomerization conditions over a molecular sieve catalyst. Conditions include pressures ranging from about 15 to 3000 psig, liquid hourly space velocities ranging from about 0.1 to about 20, and hydrogen to hydrocarbon mole ratios ranging from about 1 to about 50. The molecular sieve has pore diameters between about 5 and 7

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angstroms. Specific molecular sieves include SAPO-11, SAPO-31, SAPO-41, ZSM-22, ZSM-23, ZSM-35, ZSM-48, and SSZ-32. The catalyst also contains a Group VIII metal such as platinum and palladium. Example 1 indicates 0.5 wt% of metals in the catalyst. The waxy feed contains greater than about 50% wax and can contain greater than 70% paraffinic carbon. Greater than 90% wax is possible. Specifically, the feed may be a C20+ feed boiling above about 600°F. Examples of feeds include waxes from F-T synthesis, high pour point polyalphaolefins, foots oils, normal alphaolefin waxes, slack waxes, deoiled waxes, and microcrystalline waxes. This isomerization may also be employed in combination with conventional dewaxing processes to achieve a lube oil having particular desired properties thereby indicating that the conversion during the isomerization step may be less than 100%. For example, further reduction of pour point can be achieved using a conventional dewaxing process. Also, while Santilli does not disclose the amount of wax removed, it is apparent that the process of Santilli must result in the claimed branching index and wax removal because the disclosed feeds, catalysts, and conditions are similar to those claimed. See column 3, line 14 through column 10, line 15.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hicks by utilizing the catalysts disclosed by Santilli because these catalysts will provide optimum dewaxing by isomerization with minimized cracking.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hicks by limiting the conversion in the catalytic dewaxing step to the percentages claimed because Hicks discloses incomplete

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conversion (i.e., partial dewaxing) and one of ordinary skill would adjust conversion to achieve desired properties.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hicks to obtain lube oil base stock with the claimed characteristics because one would adjust conditions and feeds with the disclosed parameters to obtain a desired product including the claimed products.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hicks by utilizing the claimed feeds because such feeds are similar to those disclosed and therefore would be expected to be effectively treated in the disclosed process and because Santilli discloses that these feeds can be effectively dewaxed.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 4,919,788) in view of Santilli et al. (US 5,282,958).

The Chen reference discloses a process for producing a lubricant oil. The process comprises the partial dewaxing of a waxy feed and then solvent dewaxing the partially dewaxed feed to produce the desired lube oil. The feeds may be slack waxes and may have a paraffin (i.e., wax) content of at least 70 wt%. The partial dewaxing step is performed in the presence of a Group VIII metal and molecular sieve catalyst that removes waxy components by an isomerization process. The extent of the catalytic dewaxing is controlled by operating at a severity which reduces the pour point of the feed to no lower than about 10°F (5.5°C) higher than the target pour point. The pour point of the product from the catalytic dewaxing step should be no lower than about 10°. Catalytic dewaxing conditions include pressures ranging from 565 to

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1435 psig. The solvent dewaxing may result in a product with a pour point as low as -35°C. See col. 4, lines 27-68; col. 6, lines 3-10; col. 7, lines 28-41; col. 9, lines 3-10; col. 9, line 50 through col. 10, line 27; col. 14, line 18 through col. 15, line 20; col. 16, lines 7-22; col. 16, line 49 through col. 17, line 4; col. 17, line 54 through col. 18, line 33; col. 22, lines 14-38; and col. 23, lines 40-60.

The Chen reference does not disclose the claimed dewaxing catalysts, the catalytic dewaxing conversion percent, and the lube oil base stock characteristics.

The Santilli reference discloses a process for producing a lube oil having a VI between 90 and 160, pour point of less than 0°C, and a viscosity of between 3 and 1000 cSt @ 40°C. The process comprises contacting a waxy feed under isomerization conditions over a molecular sieve catalyst. Conditions include pressures ranging from about 15 to 3000 psig, liquid hourly space velocities ranging from about 0.1 to about 20, and hydrogen to hydrocarbon mole ratios ranging from about 1 to about 50. The molecular sieve has pore diameters between about 5 and 7 angstroms. Specific molecular sieves include SAPO-11, SAPO-31, SAPO-41, ZSM-22, ZSM-23, ZSM-35, ZSM-48, and SSZ-32. The catalyst also contains a Group VIII metal such as platinum and palladium. Example 1 indicates 0.5 wt% of metals in the catalyst. The waxy feed contains greater than about 50% wax and can contain greater than 70% paraffinic carbon. Greater than 90% wax is possible. Specifically, the feed may be a C₂₀₊ feed boiling above about 600°F. Examples of feeds include waxes from F-T synthesis, high pour point polyalphaolefins, foots oils, normal alphaolefin waxes, slack waxes, deoiled waxes, and microcrystalline waxes. This isomerization may also be employed in combination with conventional dewaxing processes to achieve a lube oil having particular desired properties thereby indicating that the conversion

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during the isomerization step may be less than 100%. For example, further reduction of pour point can be achieved using a conventional dewaxing process. Also, while Santilli does not disclose the claimed branching index and amount of wax removed, it is apparent that the process of Santilli must result in the claimed branching index and wax removal because the disclosed feeds, catalysts, and conditions are similar to those claimed. (See col. 3, line 14 through col. 10, line 15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing the catalysts disclosed by Santilli because these catalysts will provide optimum dewaxing by isomerization with minimized cracking.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by limiting the conversion in the catalytic dewaxing step to the percentages claimed because Chen discloses partial dewaxing and one of ordinary skill would adjust conversion to achieve desired properties.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen to obtain lube oil base stock with the claimed characteristics because one would adjust conditions and feeds within the disclosed parameters to obtain a desired product including those claimed products.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,663,768). Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to a process for producing a lubricating oil base stock in which a waxy feed having the same characteristics is contacted over the same molecular sieve catalyst to produce an isomerized oil having a pour point of at least 6°C above a target pour point. This isomerized oil is then solvent dewaxed to produce a lubricating oil base stock having the same viscosity index and pour point. The patented claims fully encompass the claims of the present application.

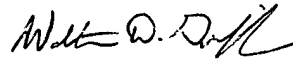
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
March 14, 2005